

AMPEX

MM100



multichannel
recorder/
reproducer





MM1100

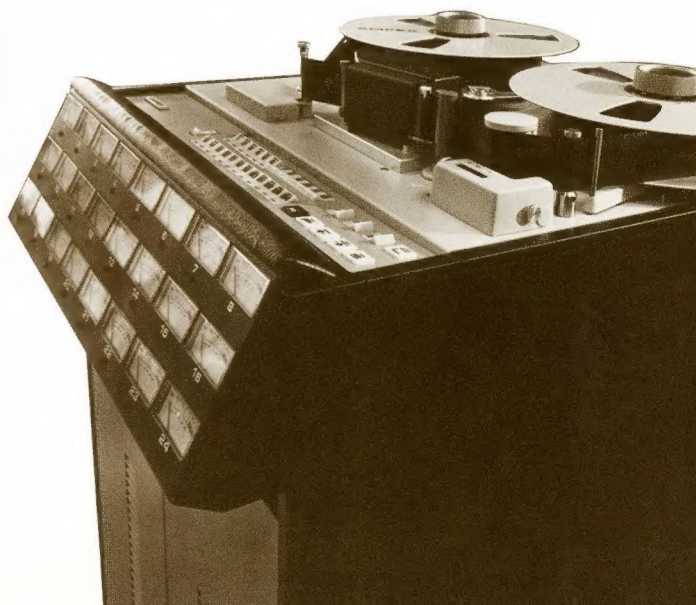
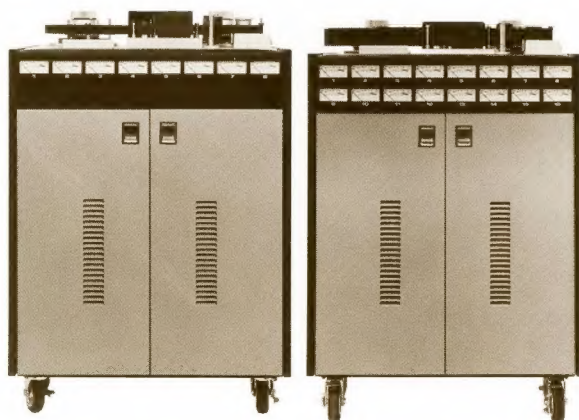
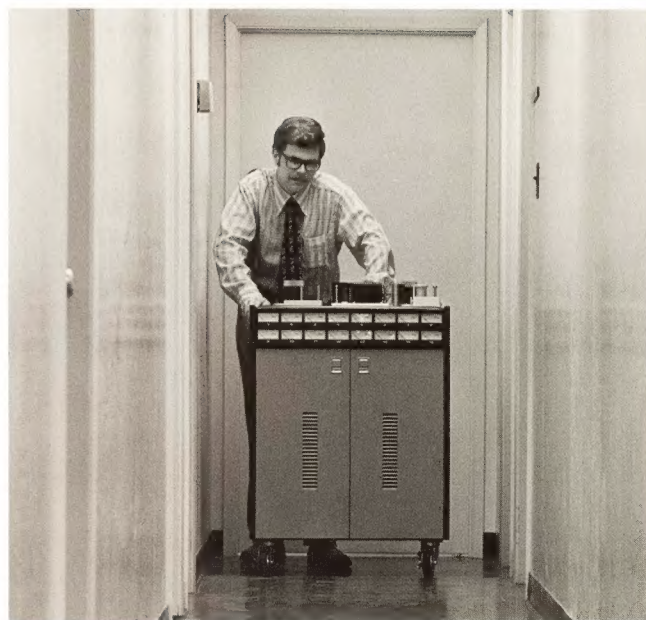
multichannel recorder/ reproducer

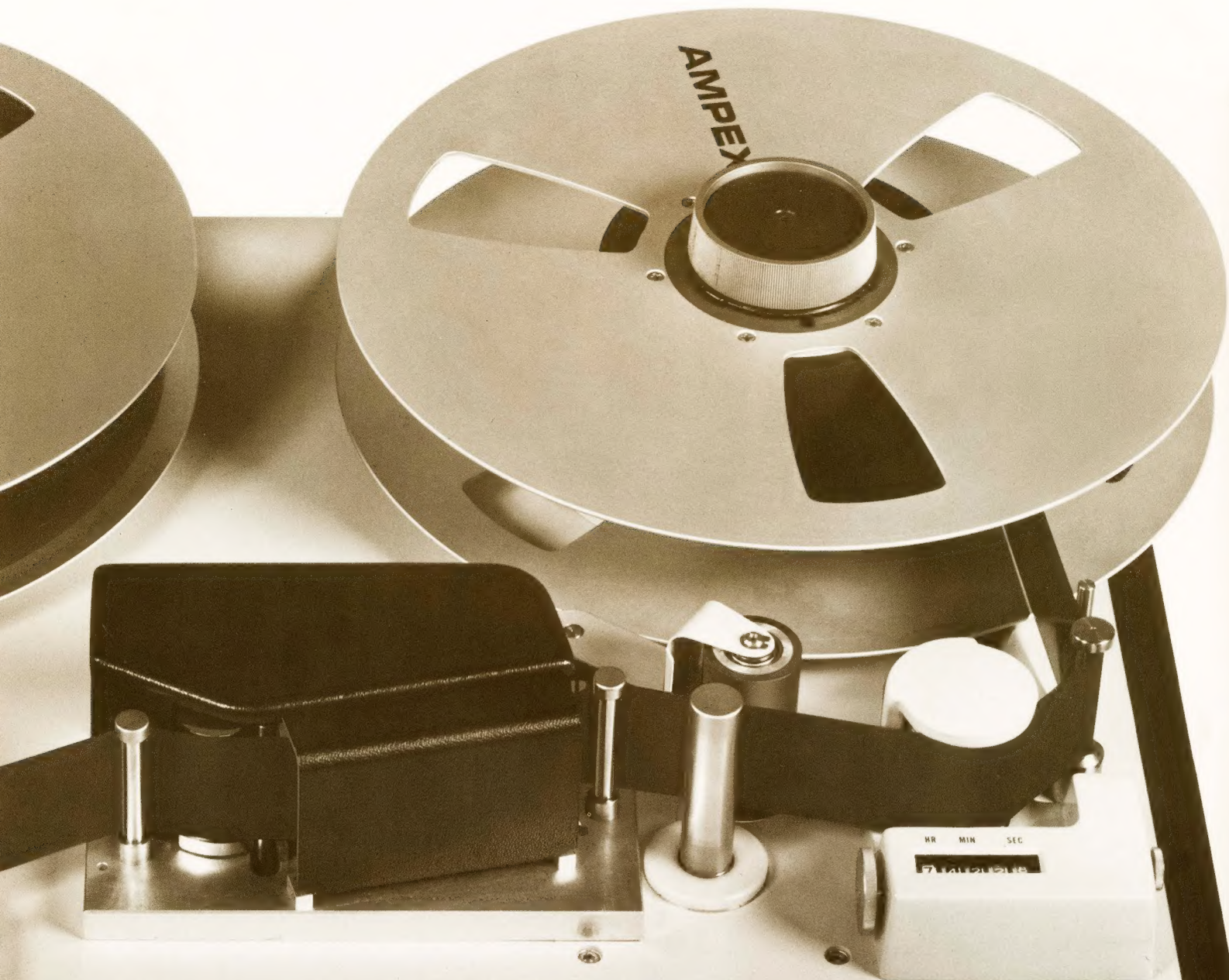
Open the door to your future, and roll in the MM-1100

Small enough to roll through a door, yet large enough to accommodate 8, 16, or 24 channels; elegant, versatile, matchless in simplicity, combining the unrivaled best in performance capability and rugged engineering — that is the Ampex MM-1100. It represents enduring excellence, at a very competitive price.

No recorder made exceeds its performance, or is likely to in the foreseeable future. Exclusive features such as an advanced Sel-Sync* system, a unique tape-tension servo, and wide-range variable speed capability offer special advantages for critical accuracy in the re-creation of original sound, and for the use of creative recording techniques.

Of all multichannel audio recorders, the MM-1100 is one of the easiest to operate. Its versatility allows almost unlimited scope to professionals at all levels in achieving desired results in mastering and mixdown.



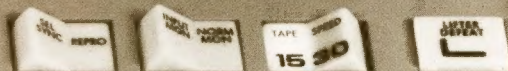


CHANNEL SELECTOR

READY 1 SAFE	READY 2 SAFE	READY 3 SAFE	READY 4 SAFE	READY 5 SAFE	READY 6 SAFE	READY 7 SAFE	READY 8 SAFE
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CHANNEL SELECTOR

READY 9 SAFE	READY 10 SAFE	READY 11 SAFE	READY 12 SAFE	READY 13 SAFE	READY 14 SAFE	READY 15 SAFE	READY 16 SAFE
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MM-1100

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ELECTRONICS:

The electronics of the MM-1100 maintain the single Ampex standard of excellence for all of the company's professional audio recorders. That standard establishes the state-of-the-art for the audio recording industry.

THE TRANSPORT:

The transport system is an improved version of the powerful and rugged design which Ampex developed years ago for videotape recorders — capable of handling heavy reels of two-inch tape with the utmost precision. It provides plenty of power to spare for handling 10½" or 14" reels of 2-inch tape.

CAPSTAN SERVO:

The MM-1100 employs a unique, dc direct-drive phase lock servo system which insures accuracy of $\pm .05\%$ and stabilizes tape motion in 0.5 sec at 15 in/s. A large capstan improves tape control and prevents slippage. The servo uses a crystal reference for stability, and eliminates the influence of any such flutter-producing elements as line power, drive belts or pulleys.

CONSTANT TAPE TENSION:

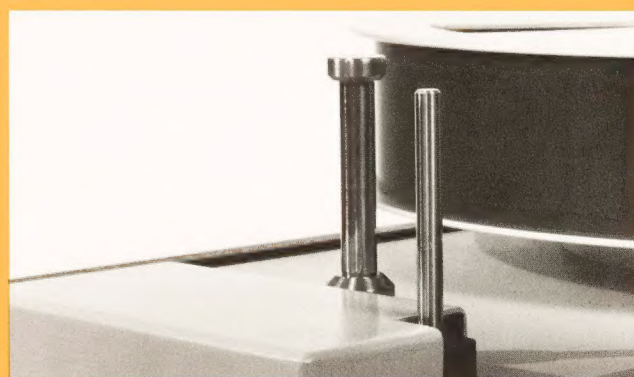
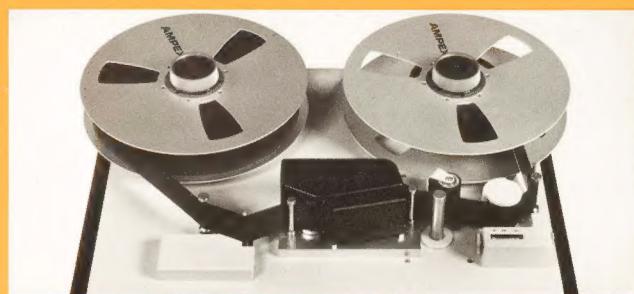
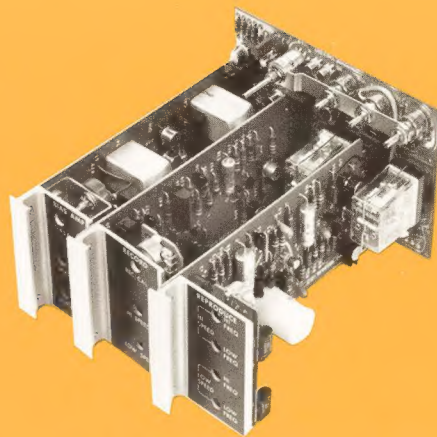
An exclusive tape-tension servo assures constant tension past the heads at all times.

IMPROVED SEL-SYNC PLAYBACK:

With the help of special electronics and heads, Sel-Sync playback of the MM-1100 is equal in every respect to normal reproduce performance. That's the best advantage you can ask, for "ping-pong" applications.

VARIABLE-SPEED CONTROLS:

The MM-1100 permits variable speed operation by an external oscillator over a range from 3 in/s to 90 in/s. The advantage of an oscillator as the external source is that it provides an easily measured reference (frequency) that can be accurately repeated later.



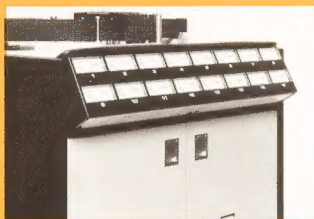


MM1100

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EASY TO USE: The MM-1100 is designed for the easiest possible operation.

Numbered VU meters are arranged in a single cluster, on a tiltable panel.



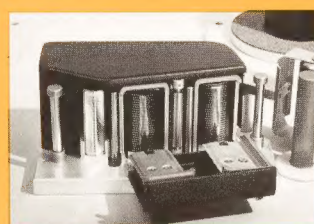
High-speed fast forward and rewind speed your work. Even at high speeds tape tension is controlled, resulting in gentle handling and smooth tape pack.



The tape position index is tape-driven in all modes, and reads directly in hours, minutes and seconds.



The head cover opens wide to give you unrestricted room for editing.



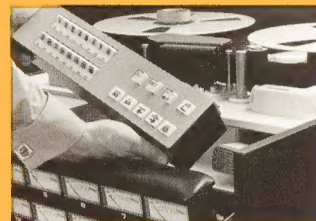
Tape reels slide onto the hubs in any position—no need to line them up with a key or a tab.



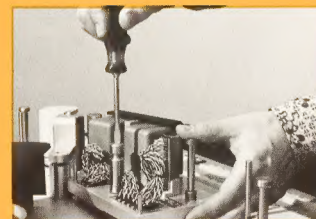
Controls are conveniently placed and clearly marked.



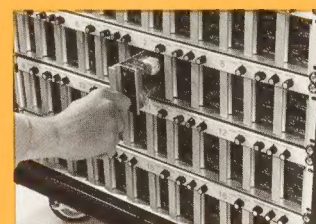
The control panel is easily removable for remote operation.



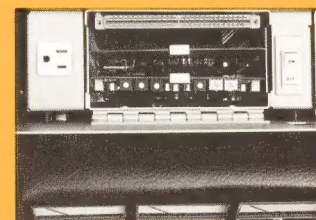
Tape head interchange is extra simple—there is only one screw to loosen. When one-inch and two-inch heads are interchanged, the tape-tension servo is automatically switched to the correct range.



EASY TO MAINTAIN: Routine maintenance is a simple matter. All electronics can be easily reached. The VU meter panel may be tilted downward to permit easy access to meter lamps. All tape tension adjustments are conveniently located on the top of the machine. Likewise, all control logic and servo circuitry is similarly accessible.



RUGGED CONSTRUCTION: The MM-1100 is solidly built. The entire framework is of steel. The milled, aluminum top plate is unusually large and thick, and further strengthened by a deep, four-sided, welded skirt. That means permanent rigidity, which, in turn, means stable alignment of the head assembly and tape guides during prolonged operation.



Accessories

SEARCH-TO-CUE & TAPE TIMING ACCESSORY

Permits operator to set a cue point anywhere on a tape, then return to that exact point from either direction automatically and at shuttle speed (Fast Forward or Rewind). Accurate to ± 0.5 second at 15 in/s. Easy-to-read digital readout mounts on top of transport. Remote display/controller also available. Tape-driven operation, reads up to 1 hour, 59 minutes, 59 seconds. Proportional trajectory with no overshoot at cue point.

PICK-UP RECORDING CAPABILITY ACCESSORY (PURC)

Assures clean, precise insert edits by eliminating over recording on punch-in and the blank space on punch-out, caused by the distance between the erase and record heads. Automatically compensates for high/low speed operation. Consists of PURC bias board and special MM-1100 Audio Switcher Assembly.

OVERHEAD ACCESSORY BRIDGE ASSEMBLY

Easily installed overhead accessory bridge fits all MM-1100 Series recorders, provides convenient, secure mounting for accessories. Standard 19½ inch rack width, with risers 3½ inches high. One to four pairs of risers may be installed to fit desired installation. Holds up to 100 lb of accessories such as Auditec II, Sync Lock, VS-10, and Audio synchronizing equipment components.

TIME CODE SYNCHRONIZATION SYSTEMS

Versatile, modular time code synchronization components can be combined for various system applications. SMPTE code is used for precise synchronization of multitrack audio recorders with quad or helical video recorders, or for synchronization of two or more audio recorders. Components available include Wide Range Synchronizer, Dual Cue Controller, Edit Code Generator, Edit Code Reader, Video Character Generator.

VIDEO LAYBACK HEAD ASSEMBLY

Interchangeable head assembly permits playback of the audio track from a quad video tape on the MM-1100, or dubbing of mixed down or sweetened audio onto the audio track. Frees video recorders during audio sweetening operations, eliminating unnecessary video head wear. Provides the vital link that allows the full multitrack capability and performance of the MM-1100 to be utilized in teleproduction.

AUDITEC II

This accessory interfaces MM-1100 Series recorders with the Ampex RA-4000 Automatic Programmer. RA-4000 controls up to three pairs of video or audio transports for precise, efficient editing and post-production of television programs. Requires SMPTE Wideband Preamplifier Accessory (see below). With Auditec II installed, the MM-1100 can still be used for all normal record/playback functions.

WBP-2 SMPTE WIDEBAND PREAMPLIFIER

Enables readout of SMPTE time code in Fast Forward and Rewind modes, as well as Play and Record. Essential to maximum utilization of sophisticated editing systems, and Time Code synchronization systems (see above). Can be installed in minutes. Accessory consists of one printed wiring board assembly which is plugged into a position on the recorder normally occupied by the standard reproduce amplifier.

VS-10 VARIABLE SPEED OSCILLATOR

Invaluable for varying broadcast running times, for phasing and delay effects, off-speed compensation, controlled double tracking. Varies the capstan speed of the recorder in play and record modes over a controlled range. Variable speed control range is ± 50 -250% of nominal. Works with speeds 3¾ to 30 in/s. Available with or without four-digit readout.

SYNC LOCK

Locks the MM-1100 to quad or helical video recorders, or another audio recorder. Can generate control track from composite video sync, servo crystal oscillator, ac line, or other external source. Variable speed range of $\pm 10\%$ of nominal can be employed for lip sync or special effects. Indicator lamp on front panel shows when 60 Hz control track signal is present. 50 or 60 Hz operation.

Specifications

TAPE WIDTHS

1 inch for 8-track systems
2 inch for 16 or 24-track systems

TAPE SPEEDS

15 and 30 in/s (38.1 and 76.2 cm/s)

REEL SIZE

NAB hub up to 16-inch diameter (Specifications apply up to 14-inch only)

INPUTS

20 kilohms balanced input. Accepts line levels from -17 dBm to produce recommended operating level.

OUTPUT

Nominal output of $+4$ dBm, maximum output of $+27$ dBm at 600-ohm load, balanced or unbalanced.

OVERALL FREQUENCY RESPONSE, SEL-SYNC & REPRODUCE MODES

30 in/s: ± 2 dB, from 50 Hz to 18 kHz
15 in/s: ± 2 dB, from 30 Hz to 15 kHz

SIGNAL-TO-NOISE RATIO, USING AMPLEX

406 TAPE OR EQUIVALENT AT 15 OR 30 IN/S

8 or 16 channels, 63 dB; 24 channels, 58 dB; peak record level to unweighted (30 Hz to 18 kHz) noise; includes bias, erase, and reproduce amplifier noise. (Peak record level corresponds to a tape flux of 520 nWb/m.)

SIGNAL-TO-NOISE RATIO, USING AMPLEX

404 TAPE OR EQUIVALENT AT 15 OR 30 IN/S

8 or 16 channels, 60 dB; 24 channels, 55 dB; peak record level to unweighted (30 Hz to 18 kHz) noise; includes bias, erase, and reproduce amplifier noise. (Peak record level corresponds to a tape flux of 370 nWb/m.)

ERASURE

At 1000 Hz, peak record level erased to -75 dB minimum on channel(s) selected.

FLUTTER

15 and 30 in/s: .08% peak weighted per ANSI S4.3/DIN 45507, in a band 0.5 to 200 Hz, while reproducing a 3150 Hz signal. (.08% NAB unweighted; peak NAB unweighted.)

CROSSTALK

-50 dB minimum for 8 and 16 channels at 500 Hz
 -45 dB minimum for 24 channels at 500 Hz

TAPE SPEED ACCURACY

Within $\pm 0.05\%$ from beginning to end of reel. Tape speed unaffected by line voltage or line frequency fluctuations (per NAB Standard on Magnetic Recording and Reproduction, 1965, Section 2.02.01).

HEADS

8, 16, and 24-track head stacks are non-adjustable precision-mounted

START TIME

Full speed within 0.5 seconds at 15 in/s

POWER REQUIREMENTS

105 to 125 vac, 48 to 62 Hz

POWER CONSUMPTION

MM-1100-8	0.8 kVa maximum	} without accessories
MM-1100-16	1.0 kVa maximum	
MM-1100-24	1.2 kVa maximum	

SIZE

-8 & -16 29" W \times 27" D \times 42" H (74 cm \times 69 cm \times 107 cm)
 -24 29" W \times 27" D \times 45" H (74 cm \times 69 cm \times 114 cm)

WEIGHT

-8 415 lb. (188 Kg)
 -16 465 lb. (210 Kg)
 -24 530 lb. (240 Kg)

Ampex Corporation reserves the right to change specifications without notice and without obligation.

These specifications supersede all previous specifications, stated or implied.

AMPEX

Ampex Corporation, Audio-Video Systems Division
401 Broadway
Redwood City, California 94063

U.S. Sales Offices in: CALIFORNIA, Los Angeles (213) 240-5000
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